

# Draft Project-Level Conformity Determination Air Quality Fine Particulate Matter (PM<sub>2.5</sub>)

## Interstate 215 (I-215) Widening/ Reconstruction Project from Orange Show Rd. to I-210/ I-215 Interchange San Bernardino, California

### I. PURPOSE OF THIS DOCUMENT

The *Clean Air Act section 176(c)* requires that federally supported highway and transit project activities are consistent with state air quality goals, found in the *state implementation plan* (SIP). The process to ensure this consistency is called Transportation Conformity. Conformity to the SIP means that transportation activities will not cause new violations of the *national ambient air quality standards* (NAAQS or “standards”), worsen existing violations of the standard, or delay timely attainment of the relevant standard.

Transportation conformity is required for federal supported transportation projects in areas that have been designated by the U.S. Environmental Protection Agency (EPA) as not meeting a NAAQS. These areas are called *nonattainment areas* if they currently do not meet air quality standards or *maintenance areas* if they have previously violated air quality standards, but currently meet them and have an approved *Clean Air Act section 175A* maintenance plan.

The project is located in the South Coast Air Basin (SCAB). The U.S. Environmental Protection Agency (EPA) classifies this air basin as nonattainment for federal PM<sub>2.5</sub><sup>1</sup> ambient standards. This project is a STAA truck route and increases the number of diesel trucks that would utilize the facility. The *Surface Transportation Assistance Act* (STAA) of 1982 allows large trucks to operate on the Interstate and certain primary routes called collectively the National Network. These trucks, referred to as STAA trucks, are longer than California legal trucks. As a result, STAA trucks have a larger turning radius than most local roads can accommodate.

Interstate 215 in the project area is not listed as a “Major International Trade Highway Route” in the California Goods Movement Action Plan (<http://www.arb.ca.gov/gmp/gmp.htm>) as of June 2006.

Interstate 215 in the project area does not now, and is not projected to, carry more than 10,000 trucks per day. However, because the project adds both High Occupancy Vehicle and mixed flow lanes to a major freeway, and because the project would accommodate a significant (more than 5%) increase in trucks from the No Project scenario in an urbanized area with nearby sensitive receptors (primarily residential development), it was determined that this is a project of air quality concern. A conformity determination for fine particulate matter (PM<sub>2.5</sub>) is required for any, federal approval or authorization

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<sup>1</sup>EPA posted the final rule on its website on March 1, 2006 and the final rule was published in the Federal Register on March 10, 2006.

subsequent to April 5, 2006, when conformity for the PM<sub>2.5</sub> NAAQS became applicable to the area.

EPA amended the Transportation Conformity rule on March 10, 2006<sup>2</sup>, requiring a hot-spot analysis to determine project-level conformity in PM<sub>2.5</sub> and PM<sub>10</sub> nonattainment and maintenance areas. A hot spot analysis is an assessment of localized emissions impacts from a proposed transportation project and is only required for “projects of air quality concern.” The March 10, 2006 rule provides examples of projects of air quality concern. The PM<sub>2.5</sub> and PM<sub>10</sub> hot-spot requirements in the final rule became effective April 5, 2006. Project level conformity determinations are required pursuant to 40 CFR §93.116. and §93.123.

**Figure 1: Regional Vicinity Map for I-215 Widening/ Reconstruction Project**



<sup>2</sup>USEPA: Last updated July 2006; URL: <http://www.epa.gov/oar/oaqps/greenbk/>

## II. PROJECT DESCRIPTION

### Existing Facility

The existing facility consists of two to three mixed flow lanes in each direction. In 1999, one auxiliary lane in the Northbound (NB) and Southbound (SB) direction was added between Inland Center Drive and Mill Street and between Mill Street and 2<sup>nd</sup> Street. Land uses adjacent to I-215 within the project limits are primarily urbanized, consisting of residential, commercial and industrial uses.

### Proposed Project Description

It is proposed to add a high occupancy vehicle (HOV) lane and a mixed flow lane in each direction to I-215 in the City of San Bernardino between Orange Show Road and 27<sup>th</sup> Street to reduce congestion and improve safety. The project will also include removing or modifying existing ramps and interchanges, adding auxiliary lanes, and improvements to local arterial streets in the vicinity of modified interchanges. The project is divided for funding and construction staging purposes into five segments that will be designed and constructed independently. The limits of the segments are as follows:

- 007171, Segment 3: 400m s/o Orange Show Rd. to Rialto Ave. (Const. 5/7/07-12/28/09)- KP 6.6/10.8
- 0071A1, Segment 1: Rialto Ave. to 9<sup>th</sup> St. (Const. 3/17/08-3/17/11)- KP 10.8/12.1
- 0071C1, 5<sup>th</sup> St. (Rte 66) Early Bridge Construction (Const. 1/15/07-7/15/09)- KP 11.6
- 007161, Segment 2: 9<sup>th</sup> St. to 400m n/o 16<sup>th</sup> St. (Const. 3/17/09-3/17/13)- KP 12.1/14.4
- 007191, Segment 5: 400m n/o 16<sup>th</sup> St. to SR-210 (Const. 1/3/11-1/3/13)- KP 14.4/16.1

Funding programs and the conforming regional Transportation Improvement Program require that the segments be approved for right of way acquisition and construction purposes no later than the following dates, in order to use funds when available and achieve the open-to-traffic dates assumed in the regional Transportation Control Measure analysis. The HOV lane component of this project is considered a Transportation Control Measure.

- August 20, 2006: Segment 1, 2 and 3 (Right of Way acquisition funding)
- August 30, 2006: Early Bridge project (Construction approval)
- December 11, 2006: Segment 3 (Construction funding)
- October 1, 2007: Segment 1 (Construction funding)
- January 2008: Segment 5 (Right of Way acquisition funding)
- October 1, 2008: Segment 2 (Construction funding)
- July 15, 2010: Segment 5 (Construction funding)

## **Need and Purpose**

The Average daily traffic (ADT) varies between 86,600 and 168,100 from Segment 3 to Segment 5. The ADT is expected to increase to between 160,000 and 274,500 in the year 2030. The completed State Route 210 (SR 210) was included in the model as a major traffic generator during reverse peak periods. In the early 1970s it was recognized that due to projected traffic volumes and existing operational characteristics, access and safety improvements were warranted for this section of I-215. The proposed project will improve operational characteristics, including removal of left hand on and off ramps merging into the number 1 mixed flow lane.

According to traffic counts and observations, the existing facility becomes congested to a point of stop-and-go traffic flow at about 1600 vehicles per lane per hour, 9600 vehicles per hour for the six-lane freeway. This is due to the presence of left entrance and exit ramps and other design characteristics such as: interchange spacing, partial interchanges, and weaving distances. Existing peak-hour traffic volumes are above the capacity of the freeway from approximately I-10 to the I-215/ SR-259 Interchange. Peak-hour traffic at ramps queues far enough to extend into freeway travel lanes, especially at Orange Show Road and Inland Center Drive.

The existing I-215 freeway was built to design standards acceptable for its time of construction and type of facility. This project will upgrade this section of highway to current Highway Design Standards where feasible.

## **Alternatives**

### **Alternative 1: No Build**

The No Build Alternative will not resolve the I-215 capacity deficiency, congestion problems and safety issues within the project limits. Without highway improvements, traffic congestion will continue to worsen along I-215. Extended hours of congestion will increase emissions from traffic, including trucks.

### **Alternative 2: Preferred Alternative**

Add one HOV lane and one additional mixed flow lane in each direction on I-215 from Orange Show Road to 27<sup>th</sup> Street in the City of San Bernardino. Other improvements include removing or modifying existing ramps and interchanges, auxiliary lanes, and improvements to the local arterial streets in the vicinity of modified interchanges. The project will widen the freeway about centerline from Orange Show Road to Rialto Avenue and realign the freeway from Rialto to 27<sup>th</sup> Street. In order to provide sufficient weave distance between the Orange Show Road and Inland Center Drive Interchanges, the entrance and exit ramps will be braided by the use of bridge structures and retaining walls to create two independent diamond interchanges (Type L-3, Highway Design Manual). The segment between Rialto Avenue and 9<sup>th</sup> Street will be reconstructed horizontally and vertically in the NB and SB directions.

The preferred alternative proposes the construction of a Split Diamond Interchange System at 2<sup>nd</sup> and 3<sup>rd</sup> Street with braided ramps between 3<sup>rd</sup> Street and 5<sup>th</sup> Street. The segment between 9<sup>th</sup> Street and 16<sup>th</sup> Street will reconstruct all the existing NB and SB hook and fly-over ramps. The proposed entrance and exit ramps will be reconstructed to tie in directly to Baseline as a modified diamond interchange. Due to the close interchange spacing between Baseline and SR 259, the proposed improvements will consist of braided ramps between the interchanges. The NB on-ramp from Baseline

provides a slip ramp connection to SR 259. The SB off-ramp to Baseline from I-215 connects with an off-ramp from SR 259. The Highland Avenue interchange will be reconstructed and reconfigured to improve operations.

The majority of the freeway will be completely reconstructed in Segments 1 and 2 and the existing structural section will be removed. However, the Redlands Loop Overhead (Br. No. 54 089) and Rialto Avenue Overcrossing (Br. No. 54 088) will remain. In Segment 3, Orange Show Road to Rialto Avenue, the freeway will not be completely reconstructed, nor will the structural section be completely removed. In Segment 3, the freeway will be widened to the outside. A new structural section will be constructed in accordance with the Materials Report and conform to the new freeway alignment.

#### High Occupancy Vehicle (HOV) Lanes

An HOV Report was prepared and concluded that the proposed HOV lanes would operate in year 2015 at traffic LOS C and the adjacent mixed-flow lanes would operate LOS E. If additional mixed-flow lanes are constructed instead of the HOV lanes, the freeway will operate at LOS F in year 2015.

#### Railroad Involvement

The Burlington Northern Santa Fe (BNSF) tracks run parallel to I-215 from 3<sup>rd</sup> Street to 27<sup>th</sup> Street. Additionally, Metrolink maintains the Redlands Loop track which crosses under I-215 south of Rialto Avenue. The Redlands Loop right of way is owned by SANBAG. Metrolink may operate trains along this right of way in the future.

### III. BACKGROUND

#### **What is Particulate Matter (PM)?**

Airborne particulate matter (PM) consists of many different substances suspended in air in the form of particles (solids or liquid droplets) that vary widely in size. The particle mix in most U.S. cities is dominated by fine particles (less than 2.5 micrometers in diameter) generated by combustion sources, with smaller amounts of coarse dust (between 2.5 and 10 micrometers in diameter). Particles less than 10 micrometers in diameter include both fine and coarse dust particles. These particles pose the greatest health concern because they can pass through the nose and throat and get into the lungs. Particles larger than 10 micrometers in diameter that suspend in the air are referred to as total suspended particulates (TSP). These larger particles can cause irritation to the eyes, nose and throat in some people, but they are not likely to cause more serious problems since they do not get down into the lungs.

Motor vehicles (*i.e.*, cars, trucks, and buses) emit direct PM from their tailpipes, as well as from normal brake and tire wear. In addition, vehicles cause dust from paved and unpaved roads to be re-entrained, or re-suspended, in the atmosphere. In addition, highway and transit project construction may cause dust. Finally, gases in vehicle exhaust may react in the atmosphere to form PM. Particles come in a wide variety of sizes and have been historically assessed based on size, typically measured by the diameter of the particle in micrometers. PM<sub>2.5</sub>, or fine particulate matter, refers to particles that are 2.5 micrometers in diameter or less. (*Note:* A human hair is about 70 micrometers in diameter and a grain of sand is about 90 micrometers in diameter). The National Ambient Air Quality Standards (NAAQS) for fine particulate matter include an annual standard (15.0 micrograms per cubic meter (ug/m<sup>3</sup>)) and a 24-hour standard (65 ug/m<sup>3</sup>). The annual standard is based on a 3-year average of annual mean PM<sub>2.5</sub> concentrations; the 24-hour standard is based on a 3-year average of the 98<sup>th</sup> percentile of 24-hour concentrations.

#### **Statutory Requirements for PM Hotspot Analyses**

On March 10, 2006, EPA issued amendments to the Transportation Conformity Rule to address localized impacts of particulate matter: “PM<sub>2.5</sub> and PM<sub>10</sub> Hot-Spot Analyses in Project-level Transportation Conformity Determinations for the New PM<sub>2.5</sub> and Existing PM<sub>10</sub> National Ambient Air Quality Standards” (71 *FR* 12468). This rule amendment requires the assessment of localized air quality impacts of Federally-funded or approved transportation projects in PM<sub>10</sub> and PM<sub>2.5</sub> nonattainment and maintenance areas deemed to be *projects of air quality concern*.<sup>3</sup> This assessment of localized impacts (*i.e.*, “hot-spot analysis”) examines potential air quality impacts on a scale smaller than an entire nonattainment or maintenance area. Such an analysis is a means of demonstrating that a transportation project meets Clean Air Act conformity requirements to support State and local air quality goals.

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<sup>3</sup> Criteria for identifying projects of air quality concern is described in 40 CFR 93.123(b)(1), as amended

If a project still requires a Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) approval or authorization, a project-level conformity determination will be required prior to the first such action on or after April 5, 2006, even if the project has already completed the National Environmental Policy Act (NEPA) process. After project-level conformity is determined for a project, a new conformity determination is only required under the scenarios discussed in 40 CFR 93.104(d).<sup>4</sup>

Qualitative hot-spot analysis is required for these projects before EPA releases its future quantitative modeling guidance and announces that quantitative PM<sub>2.5</sub> hot-spot analyses are required under 40 CFR §93.123(b)(4). EPA requires hot-spot findings to be based on directly emitted PM<sub>2.5</sub>, since secondary particles take several hours to form in the atmosphere giving emissions time to disperse beyond the immediate area of concern. The Conformity Rule requires PM<sub>2.5</sub> hot-spot analyses to include road dust emissions only if such emissions have been found significant by EPA or the state air agency prior to the PM<sub>2.5</sub> SIP or as part of an adequate PM<sub>2.5</sub> SIP motor vehicle emissions budget (40 CFR §93.102(b)(3)). Emissions resulting from construction of the project are not required to be considered in the hot-spot analysis if such emissions are considered temporary according to 40 CFR §93.123(c)(5).

Construction activities produce combustion emissions from various sources, such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting the construction crew. Exhaust emissions during the construction envisioned on site will vary daily as construction activity levels change. The use of construction equipment on site will result in localized exhaust emissions. Caltrans Standard Specifications for construction (Section 10 and 18 for dust control and Section 39-3.06 for asphalt concrete plant) will be adhered to in order to reduce emissions as a result of construction equipment. In order to further minimize construction-related emissions, all construction vehicles and construction equipment would be required to be equipped with the state-mandated emission control devices pursuant to state emission regulations and standard construction practices.

The PM<sub>2.5</sub> and PM<sub>10</sub> hot-spot requirements in the final rule became effective April 5, 2006. A qualitative PM<sub>2.5</sub> and PM<sub>10</sub> hot-spot analysis that meets the final rule's requirements must be completed for project-level determinations for projects of air quality concern completed on or after April 5, 2006.

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<sup>4</sup> 40 CFR 93.104 (d) states, "FHWA/FTA projects must be found to conform before they are adopted, accepted, approved or funded. Conformity must be redetermined for any FHWA/FTA project if one of the following occurs: a significant change in the project's design concept and scope; three years elapse since the most recent major step to advance the project; or initiation of a supplemental environmental document for air quality purposes. Major steps include NEPA process completion; start of final design; acquisition of a significant portion of the right-of-way; and, construction (including Federal approval of plans, specifications and estimates)."

## **IV. Regional Conformity Determination**

*Section 176(c)* of the Clean Air Act and the federal conformity rule require that transportation plans and programs conform to applicable state air quality implementation plans (SIPs) and Section 174 and 176(c) and (d) of the Clean Air Act (42 U.S.C. 7504, 7506(c) and (d)). The proposed project is included in the 2004 Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) was found to be conforming by FHWA and FTA on June 7, 2004 and is fully programmed in the 2004 Regional Transportation Improvement Program (RTIP). The project is also in the 2004/05 – 2009/10 RTIP, which was found to be conforming by FHWA and FTA on October 4, 2004. Project design concept and scope are also consistent with the project description in the RTP and Federal Transportation Improvement Program (FTIP). The FTIP was approved on October 4, 2004.

The following project information is excerpted from the RTIP:

Description - I-215 Corridor North- In SBd, on I-215 from Rte 10 to Rte 210- add 2 HOV lanes one in each direction and operational improvements including auxiliary lanes and collector distributor roads.

Project ID# - 713\_SBd-215

Air Basin – SCAB

Model# - S298

Program Code – CAX69

Route – 215

Begin Post Mile – 4.1

End Post Mile – 10.1

Description - I-215 corridor north from Rte 10 to Rte 30 – Add 2 mixed flow lanes, 1 in each direction.

Project ID# - 200444\_SBd-215

Air Basin – SCAB

Model # - S353

Program Code – CAX59

Route – 215

Begin Post Mile – 4.1

End Post Mile – 10.1



## **V. Climate and Meteorology of the South Coast Air Basin**

The proposed project site is located in San Bernardino, an area within the South Coast Air Basin (Basin) that includes Orange, Los Angeles (non-desert portions), western Riverside County, and southwestern San Bernardino County. The South Coast Air Quality Management District (SCAQMD) carries out air quality planning and administers air quality regulations in the Basin.

The terrain and its geographic location determine the Basin climate. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern boundary and mountains surround the rest of the Basin. The region lies in the semi-permanent high-pressure zone of the eastern Pacific. The resulting climate is generally mild and tempered by ocean breezes. This climatological pattern is occasionally interrupted, by periods of extremely hot weather, winter storms, and Santa Ana wind conditions. The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s Fahrenheit. With increasing distance from the coast, depending to some extent upon the amount of marine influence experienced, temperature ranges become greater, especially in the mountain areas. The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin along the coastal side of the mountains.

The proposed project is located in San Bernardino County. Using the 30-year monthly climate summary, from 1971 to 2000, from the Western Region Climate Center's San Bernardino meteorological station (#047723), the average minimum temperature is 41.3 degrees Fahrenheit in the month of December. The average maximum summertime temperature is 95.6 degrees Fahrenheit in the month of July. The rainfall season is from November to April with a 30-year annual average of 16.33 inches.

## VI. PM<sub>2.5</sub> Hot Spot Analysis

According to *40 CFR §93.123(b)(2) and (4)*, a quantitative analysis for applicable projects is not required until EPA releases modeling guidance in the Federal Register. However, a qualitative hot spot analysis is still required. For this project, a qualitative project-level hot-spot assessment was conducted in order to assess whether the project will cause or contribute to any new localized PM<sub>2.5</sub> violations, or increase the frequency or severity of any existing violations, or delay timely attainment of the PM<sub>2.5</sub> NAAQS.

The designation for PM<sub>2.5</sub> cites the SCAB with the status of nonattainment per federal designation.

PM<sub>2.5</sub> nonattainment and maintenance areas are required to attain and maintain two standards:

- 24-hour standard – 65 µg/m<sup>3</sup>, and
- Annual standard – 15 µg/m<sup>3</sup>

The current 24-hour standard is based on a 3-year average of the 98<sup>th</sup> percentile of 24-hour PM<sub>2.5</sub> concentrations; the current annual standard is based on a 3-year average of annual mean PM<sub>2.5</sub> concentrations.

PM<sub>2.5</sub> hot-spot analysis must consider both standards, unless it is determined for a given area that meeting the controlling standard would ensure that Clean Air Act requirements are met for both standards.

The nearest PM<sub>2.5</sub> monitoring station is located at San Bernardino – 4<sup>th</sup> Street. The data from 2003-2005 are provided in Table 1.

**Table 1: PM<sub>2.5</sub> Data at San Bernardino – 4<sup>th</sup> Street (µg/m<sup>3</sup>)**

Year:	2003		2004		2005	
	Date	Measurement	Date	Measurement	Date	Measurement
National:						
First High:	Oct 6	73.9	Jul 5	93.4	Oct 22	106.2
Second High:	Oct 9	62.5	Mar 19	81.9	Nov 6	45.3
Third High:	Mar 13	58.4	Mar 22	72.4	Mar 8	43.4
Fourth High:	Jun 8	55.1	Jan 19	69.3	May 4	35.0
California:						
First High:	Oct 6	73.9	Jul 5	93.4	Oct 22	106.2
Second High:	Oct 9	62.5	Mar 19	81.9	Nov 6	45.3
Third High:	Mar 13	58.4	Mar 22	72.4	Mar 8	43.4
Fourth High:	Jun 8	55.1	Jan 19	69.3	May 4	35.0
# Days Above Nat'l Standard:	1			4		1
3-Year Average 98th Percentile:	64			66		58
1-Year 98th Percentile:	58.4			72.4		43.4
National 3-Year Average:	24			23		20
National Annual Average:	22.2			21.9		17.4
State 3-Yr Maximum Average:	26			26		22
State Annual Average:	22.2					

<http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/Branch>

The trend of the annual averages for PM<sub>2.5</sub> for the period 2003 –2005 was downward. The unusual number of exceedances for PM<sub>2.5</sub> may be a result of extensive wildfires in San Bernardino area on January 19<sup>th</sup>, March 19<sup>th</sup>, March 22<sup>nd</sup>, and July 5<sup>th</sup> of 2004.

In the SCAG region, the South Coast Air Basin (SCAB) is the only area that has been designated by EPA as the PM<sub>2.5</sub> nonattainment area with attainment year 2015.

### **Current and Forecasted Traffic**

The 2003 traffic volumes and projected 2030 traffic volumes for the various segments are presented in Table 2 and Table 3. Also, the 2003 traffic volumes and projected 2013 traffic volumes for various segments are presented in Table 4 and Table 5.

**Table 2: I-215 Traffic Forecasts No Build Scenario, 2030**

Location	2003 ADT w/o Trucks	2003 Truck ADT	2003 Total ADT	2030 ADT w/o Trucks	2030 Truck ADT	2030 Total ADT	2030 no- build Truck %
<b>NORTH BOUND</b>							
SR-215 North of I-10	92,300	5,280	97,600	121,500	6,950	128,400	5
SR215 N.of Orange Show Rd off ramp	65,500	4,030	69,500	88,600	5,450	94,000	6
SR215 N.of Inland Center Dr on ramp	74,500	4,380	78,900	101,300	5,950	107,100	6
SR215 N. of Mill St. on ramp	79,200	4,610	83,800	106,900	6,210	112,900	6
SR215 N. of 5th St. off ramp	57,800	3,620	61,400	80,300	5,010	85,000	6
SR-215 North of 5th St on ramp	69,500	3,820	73,300	103,100	5,650	108,300	5
SR-215 N. of Baseline off ramp	59,400	3,500	62,900	86,900	5,100	91,600	6
SR-215 North of SR-259	37,200	2,680	39,900	54,200	3,870	57,700	7
SR-215 North of Highland	31,900	2,730	34,600	42,300	3,590	45,500	8
<b>SOUTH BOUND</b>							
SR-215 South of 27th St	44,900	1,840	46,700	81,200	3,330	84,600	4
SR-215 South of SR-259	76,200	2,810	79,000	120,100	4,430	124,600	4
SR-215 south of Baseline on ramp	84,400	3,310	87,700	130,600	5,130	135,800	4
SR-215 S. of 2nd St off ramp	71,100	2,720	73,800	104,600	4,000	108,600	4
SR-215 S. of 2nd St on ramp	85,800	3,400	89,200	126,900	5,030	132,000	4
SR215 north of Inland ctr Dr	78,500	3,100	81,600	113,500	4,480	118,000	4
SB215 S. of Orange Show off ramp	68,000	2,480	70,500	101,000	3,680	104,700	4
SR-215 Sth of Orange Show Rd	84,800	3,420	88,200	121,700	4,910	126,700	4

**Table 3: I-215 Traffic Forecast Braid-Split Alternative Volumes, 2030**

Location	2003 ADT w/o Trucks	2003 Truck ADT	2003 Total ADT	2030 ADT w/o Trucks	2030 Truck ADT	2030 Total ADT	Diff. between build and no-build 2030 truck ADT	Diff. Between build and no-build 2030 total ADT	Build 2030 Truck %
<b>NORTH BOUND</b>									
SR-215 North of I-10	92,300	5,280	97,600	136,500	7,810	144,300	860	15,900	5
SR215 N.of Orange Shw Rd off ramp	65,500	4,030	69,500	99,500	6,130	105,600	680	11,600	6
SR215 N.of Inland Cntr Dr on ramp	74,500	4,390	78,900	113,700	6,700	120,400	750	13,300	6
SR215 N. of Mill St. on ramp	79,200	4,610	83,800	120,000	6,990	127,000	780	14,100	6
SR215 N. of 5th St. off ramp	57,800	3,620	61,400	90,000	5,640	95,700	630	10,700	6
SR-215 North of 5th St on ramp	69,500	3,820	73,300	115,500	6,350	121,900	700	13,600	5
SR-215 N. of Baseline off ramp	59,400	3,500	62,900	97,300	5,730	103,100	630	11,500	6
SR-215 North of SR-259	37,200	2,670	39,900	60,600	4,350	65,000	480	7,300	7
SR-215 North of Highland	31,900	2,720	34,600	47,200	4,030	51,300	440	5,800	7.9
<b>SOUTH BOUND</b>									
SR-215 South of 27th St	44,900	1,840	46,700	91,300	3,740	95,000	410	10,400	4
SR-215 South of SR-259	76,200	2,810	79,000	135,000	4,980	140,000	550	15,400	4
SR-215 south of Baseline on ramp	84,400	3,320	87,700	146,800	5,770	152,600	640	16,800	4
SR-215 S. of 2nd St off ramp	71,100	2,720	73,800	117,500	4,500	122,000	500	13,400	4
SR-215 S. of 2nd St on ramp	85,800	3,400	89,200	142,600	5,660	148,300	630	16,300	4
SR215 north of Inland ctr Dr	78,500	3,110	81,600	127,500	5,050	132,600	570	14,600	4
SB215 S. of Orange Show off ramp	68,000	2,490	70,500	113,400	4,150	117,600	470	12,900	4
SR-215 Sth of Orange Show Rd	84,800	3,420	88,200	136,700	5,520	142,300	610	15,600	4

**Table 4: I-215 Traffic Forecasts Braid Split Alternative Volumes, 2013**

Location	2003 ADT	2013 ADT w/o Trucks	2013 Truck ADT	2013 Total ADT
<b>NORTH BOUND</b>				
SR-215 North of I-10	97,600	108,700	6,220	114,900
SR215 N.of Orange Shw Rd off ramp	69,500	78,100	4,810	82,900
SR215 N.of Inland Cntr Dr on ramp	78,900	89,100	5,250	94,300
SR215 N. of Mill St. on ramp	83,800	94,300	5,490	99,800
SR215 N. of 5th St. off ramp	61,400	69,700	4,370	74,100
SR-215 North of 5th St on ramp	73,300	86,500	4,760	91,300
SR-215 N. of Baseline off ramp	62,900	73,500	4,320	77,800
SR-215 North of SR-259	39,900	45,900	3,290	49,200
SR-215 North of Highland	34,600	37,600	3,210	40,800
<b>SOUTH BOUND</b>				
SR-215 South of 27th St	46,700	62,100	2,540	64,600
SR-215 South of SR-259	79,000	98,000	3,610	101,600
SR-215 south of Baseline on ramp	87,700	107,500	4,220	111,700
SR-215 S. of 2nd St off ramp	73,800	88,300	3,380	91,700
SR-215 S. of 2nd St on ramp	89,200	106,900	4,240	111,100
SR215 north of Inland ctr Dr	81,600	96,700	3,830	100,500
SB215 S. of Orange Show off ramp	70,500	84,800	3,100	87,900
SR-215 Sth of Orange Show Rd	88,200	104,000	4,200	108,200

**Table 5: I-215 No-Build Traffic Forecasts, 2013**

Location	2003 ADT	2013 ADT w/o Trucks	2013 Truck ADT	2013 Total ADT
<b>NORTH BOUND</b>				
SR-215 North of I-10	97,600	103,100	5,900	109,000
SR215 N.of Orange Shw Rd off ramp	69,500	74,000	4,560	78,600
SR215 N.of Inland Cntr Dr on ramp	78,900	84,300	4,960	89,300
SR215 N. of Mill St. on ramp	83,800	89,400	5,200	94,600
SR215 N. of 5th St. off ramp	61,400	66,000	4,130	70,100
SR-215 North of 5th St on ramp	73,300	81,800	4,500	86,300
SR-215 N. of Baseline off ramp	62,900	69,400	4,090	73,500
SR-215 North of SR-259	39,900	43,400	3,120	46,500
SR-215 North of Highland	34,600	35,600	3,050	38,600
<b>SOUTH BOUND</b>				
SR-215 South of 27th St	46,700	58,300	2,390	60,700
SR-215 South of SR-259	79,000	92,500	3,410	95,900
SR-215 south of Baseline on ramp	87,700	101,500	3,990	105,500
SR-215 S. of 2nd St off ramp	73,800	83,500	3,190	86,700
SR-215 S. of 2nd St on ramp	89,200	101,100	4,000	105,100
SR215 north of Inland ctr Dr	81,600	91,500	3,610	95,100
SB215 S. of Orange Show off ramp	70,500	80,300	2,920	83,200
SR-215 Sth of Orange Show Rd	88,200	98,500	3,970	102,500

Placeholder for Figure 2



Placeholder for Figure 3

### **Level Of Service**

The various segments of the existing freeway operate between Level of Service (LOS) E and F (PM) for the northbound direction and between LOS D and E (AM) in the southbound direction. All freeway segments will operate at LOS F in the year 2030 no build condition. The preferred alternative calls for the construction of a Braided Ramp/ Split Diamond System to implement the proposed project. The LOS is significantly improved for the build option, which includes one HOV lane and a fourth mixed flow lane in each direction. The existing and projected LOS for the various segments are presented in Tables 6 and 7. In cases where there are two LOS entries, the first one indicates the LOS of the freeway segment without the weaving analysis with auxiliary lanes, and the second LOS is with the weaving analysis with auxiliary lanes. Where two LOS values are shown, it indicates the LOS with and without the weaving analysis. The VA Traffic Study for the proposed design variation showed a few areas along the corridor where there was still LOS F. To mitigate these areas, auxiliary lanes were added to facilitate weaving and bring the LOS up to E. Specific areas addressed were between Mill and Second Street and between 5<sup>th</sup> and Baseline.

All streets crossing under or over the freeway were modeled with PASSER II-90 using 2030 traffic volumes. The mainline data were based on the East Valley Traffic Model which is consistent with SCAG CTP Subregional Model.

Table 8 presents the results of intersection analysis for the interchanges/ intersections within the project limits. The Project Development Team members selected the PM peak hour for analyzing the LOS for each of the intersections. Generally, the PM peak hour represented the worst-case scenario.

**Table 6: Northbound I-215 Mainline LOS**

Description	1998		2020 No-Build		2020 Braid Split		2030 Braid Split	
					HOV			
	AM	PM	AM	PM	AM	PM	AM	PM
Northbound								
Between I-10 and Orange Show Rd.	D	E	F	F	D	F	D/D	F/F
I-215 S. of Inland Center Dr	D	E	F	E	C	D	C	D
I-215 N. of Inland Ctr Dr Loop On Ramp	E	E	F	F	*	*	*	*
I-215 Between Inland Center Dr. and Mill	*	*	*	*	D	E	C	E
I-215 Between Mill and 2 <sup>nd</sup> /3 <sup>rd</sup>	*	*	*	*	D	E	C/D	E/E
I-215 N. of Mill St On Ramp	E	F	F	F	*	*	*	*
I-215 N. of 2nd St. On Ramp	D	F	F	F	*	*	*	*
Between 2 <sup>nd</sup> /3 <sup>rd</sup> and 5th	*	*	*	*	C	D	B	D
Between 5 <sup>th</sup> and Baseline	*	*	*	*	D	F/E	C/C	F/E
I-215 N. of 6th St Off Ramp	D	E	E	F	*	*	*	*
I-215 N. of 10th St On Ramp	D	F	E	F	*	*	*	*
I-215 N. of 13th St Off Ramp	C	E	E	F	*	*	*	*
I-215 N. of SR-259	C	E	F	F	C	D	B	D
I-215 N. of Muscupiabe Dr On Ramp	C	E	F	F	*	*	*	*
I-215 N. Of Highland Ave	C	D	F	F	*	*	*	*
At 27 <sup>th</sup> Street	*	*	*	*	B	C	A	C

**Table 7: Southbound I-215 Mainline LOS**

Description	1998		2020 No-Build		2020 Braid Split		2030 Braid Split	
					HOV			
	AM	PM	AM	PM	AM	PM	AM	PM
Southbound								
I-215 S. of 27th St	D	C	F	F	C	C	D	D
I-215 S. of SR-259	E	D	F	F	E	D	D	C
I-215 S. of 13th St Off Ramp	E	D	F	F	*	*	*	*
I-215 S. of Orange St On Ramp	E	D	F	F	*	*	*	*
Between Baseline and 5th	*	*	*	*	F	D	E/E	D/D
I-215 S. of 6th St Off Ramp	E	D	E	E	*	*	*	*
Between 5 <sup>th</sup> and 2 <sup>nd</sup> /3rd	E	D	E	F	D	C	E	C
Between 2 <sup>nd</sup> /3 <sup>rd</sup> and Mill	*	*	*	*	E	E	F/E	E
I-215 S. of 2nd St On Ramp	E	D	E	F	*	*	*	*
Between Mill and Inland Center Dr	E	E	E	F	E	D	E	D
I-215 S. of Inland Ctr Dr On Ramp	D	D	D	F	*	*	*	*
At Orange Show Rd	*	*	*	*	D	C	D	D
Between Orange Show Rd and I-10	D	E	D	F	E	D	E/E	E/E

Notes: 1. \* No data due to proposed or existing conditions

2. Where 2 LOS are shown, they refer to without/with weaving analysis with auxiliary lanes included

**Table 8: Intersection Level of Service Analysis**

Description	Delay/Vehicle	LOS	Description	Delay/Vehicle	LOS
Orange Show Road			3 <sup>rd</sup> Street		
SB Ramps	26.7	C	SB Ramps	27.1	C
NB Ramps	30.6	C	NB Ramps	25.5	C
E Street	45.0	D			
Inland Center Drive			Baseline		
SB Ramps	15.2	B	SB Ramps	24.1	C
NB Ramps	19.6	B	NB Ramps	26.2	C
Adell	29.3	C	H Street	28.8	C
Mill Street			5 <sup>th</sup> Street		
I Street	21.0	C	SB Ramps	24.7	C
SB Ramps	22.6	C	NB Ramps	26.3	C
NB Ramps	18.4	B	H Street	28.3	C
Crescent	15.5	B	G Street	29.1	C
G Street	21.1	B			
2 <sup>nd</sup> Street					
I Street	27.8	C			
SB Ramps	38.2	D			
NB Ramps	23.1	C			
G Street	31.6	C			

**Interagency Consultation**

This project was presented to the Transportation Conformity Working Group (TCWG) of SCAG for Interagency Consultation for PM2.5 on May 23, 2006. The project was reviewed as a project that is not an air quality concern and the determination was made that further information was needed. After further discussion, the project was determined a project of air quality concern. A 30-day public review period will be provided.

## **VII. Conclusion**

Based on the analysis and monitoring data for the I-215 Widening/ Reconstruction Project, it is determined that the I-215 Widening/ Reconstruction Project meets all the project level conformity requirements, and that the I-215 Widening/ Reconstruction project will not cause or contribute to a new violation of the PM<sub>2.5</sub> NAAQS, or increase the frequency or severity of a violation.

We are presently constructing Route 210 which is parallel to Route 10. Several trucks that use Route 10 and eventually Route 215 will be diverted to Route 210 (which is north of the project). As such trucks will be bypassing this segment of Route 215.

In accordance with projected increases in populations and development, future traffic volumes are anticipated to increase substantially in comparison to today's volumes.

Please note that in some sections of the build scenario, the 2030 total ADT is greater than the 125,000 ADT, but the diesel truck traffic remains less than 10,000 (The highest truck ADT for year 2030 for SR 215 north of I-10, is 7810).

The proposed improvements would reduce traffic congestion, improve local access, and improve existing roadway elements to current design standards. The improvement in flow would result in higher travel speeds. Diesel trucks produce fewer PM<sub>2.5</sub> emissions at higher speeds and the project would be expected to reduce emissions from individual diesel trucks relative to conditions without the project. Funds used in the I-215 Widening/ Reconstruction Project are Congestion Management Air Quality (CMAQ) funds, which are usually given to projects that improve air quality.

Therefore, the project meets the conformity hot-spot requirements in *40 CFR §93.116 and §93.123* for PM<sub>2.5</sub>.